

OPEN PEER REVIEW REPORT 1

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Title: Potential Role of Lycium Barbarum Polysaccharides in Glaucoma Management: Evidence from Preclinical In vivo Studies

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COMMENTS TO AUTHORS

The authors provide a comprehensive review of the role of Lycium Barbarum Polysaccharides (LBP) in RGC neuroprotection. They present useful background information and references for IOP-independent neuroprotective therapy in glaucoma. Finally, the authors discuss the effects and mechanisms of LBP pre- and post- treatment in various animal models. Importantly, they identify gaps in knowledge and suggest further experiments that should be done to fill in these gaps.

In general, this is a solid review with a good summary of this promising herbal extracts. There are several changes that could be made to improve the review and to make it more useful to a broad audience.

1. For LBP pre-treatment in Chronic Ocular Hypertension model, I invite the authors to conclude the mechanisms of LBP in RGC protection at the end of section 3.2.1, in line with the ending sentence of section 3.2.2.
2. I invite the authors to make a table with the main findings described in this review. Perhaps, the columns could be: 1) treatment of LBP, 2) animal models, 3) structural and/or functional outcomes, 4) molecular mechanisms (if known), 5) reference.
3. The number of glaucoma population in introduction in 2020 is estimated and the data needs to be updated. And more recent studies could be provided in this review.
4. For sections 3.2.5 and 3.3.4, the titles could be revised or discuss these 2 parts together, because there are many common issues that are not specific to pre- or post- treatment.